2008-2009 ESTIMATES

Natural Resources Canada

A Report on Plans and Priorities

Gary Lunn
Minister of Natural Resources

Table of Contents

Section I - Overview

Minister's Message 1
Management Representation Statement 3
Organizational Information 4
Program Activity Architecture (PAA) Crosswalk 6
Voted and Statutory Items Listed in Main Estimates 7
Planned Spending and Full Time Equivalents 8
Summary Information 9
Departmental Priorities 10
Operating Context 12
Departmental Response 13

Section II - Analysis of Program Activities by Strategic Outcome

Strategic Outcome 1 – Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians 16
Strategic Outcome 2 – Canada is a world leader on environmental responsibility in the development and use of natural resources 27
Strategic Outcome 3 – Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada 36

Section III - Supplementary Information

1. Departmental Link to Government of Canada Outcomes 46
2. Sustainable Development Strategy 47

List of Tables Available Electronically 51
3. Details of Transfer Payment Programs Exceeding $5 Million/Year 51
4. Evaluations 51
5. Foundations (Conditional Grants) 51
6. Green Procurement 51
7. Internal Audits 51
8. Loans, Investments and Advances 51
9. Geomatics Canada Revolving Fund 51
10. Services Received Without Charge 51
11. Sources of Respendable and Non-Respendable Revenue 51
12. Summary of Capital Spending by Program Activity 51
13. User Fees 51

Minister's Message

It is my pleasure to present Natural Resources Canada's 2008–09 Report on Plans and Priorities (RPP), the department's road map to program delivery.

Canada's great wealth of natural resources remains a vital part of our economy. In 2006, the resource sectors directly contributed to 13 percent of the gross domestic product, 6.5 percent of the labour force and 47.4 percent of domestic exports which contributed $91.4 billion to Canada's trade surplus. The sectors are expected to continue this outstanding performance and to provide Canadians across the country, including those in Aboriginal and northern communities, with unprecedented opportunities for jobs and growth.

The department will continue to lead and support the natural resources sectors into the modern knowledge-based global economy. In this environment, fostering innovation, skills, science and technology are paramount in creating a Canadian competitive advantage. The department will also promote Canada abroad as a safe, secure, reliable and sustainable source of natural resources.

The new Major Projects Management Office (MPMO) has been created to support increased development in the resource sectors. This Office will greatly improve the federal regulatory system by enhancing regulatory efficiency, accountability and predictability. The results will be substantial: greater certainty, increased transparency and, ultimately, more timely regulatory reviews — all contributing to more effective governance.

With regard to energy, NRCan will continue to implement our Government's ecoENERGY initiatives. In addition, ongoing investments in science and technology are expected to widen the use of clean energy as well as to reduce the environmental impacts associated with energy production and use.

Canada's forest sector remains a strong contributor to the present and future economy despite a number of challenges, including the mountain pine beetle infestation in British Columbia. NRCan is continuing its efforts to enhance the competitiveness of this vital sector and to support forest communities through creativity, innovation and technology.

Looking to the North, the protection of Canada's sovereignty will be supported by NRCan's extensive experience and expertise in the Arctic, where the department has been providing research support for fifty years. By mapping the area and its great resources, and

by conducting related science activities dealing with security and climate change adaptation, we will continue to play a vital role in fulfilling the Government of Canada's strong Arctic vision.

Beyond our borders, the Government has signalled its intention to strengthen Canada's trade investments in South America and elsewhere. Many opportunities in the energy and mining sectors are expected to result as we build stronger ties within the Americas.

Moreover, the department will conduct a full review of the structure of Atomic Energy of Canada Limited to determine if the existing structure is appropriate in a changing marketplace. The review will determine what changes, if any, are required and will be conducted by a dedicated team that will include outside experts.

Through these approaches, NRCan is actively supporting the priorities of the Government of Canada by contributing to a more prosperous future for Canada, a healthy environment for Canadians, the protection of Canada's Arctic sovereignty, enhanced safety and security, and effective governance.

Together, by focusing on clear goals and real results, we are building a stronger Canada and making life better for Canadians and their families.

Gary Lunn
Minister of Natural Resources

Management Representation Statement

STATEMENT

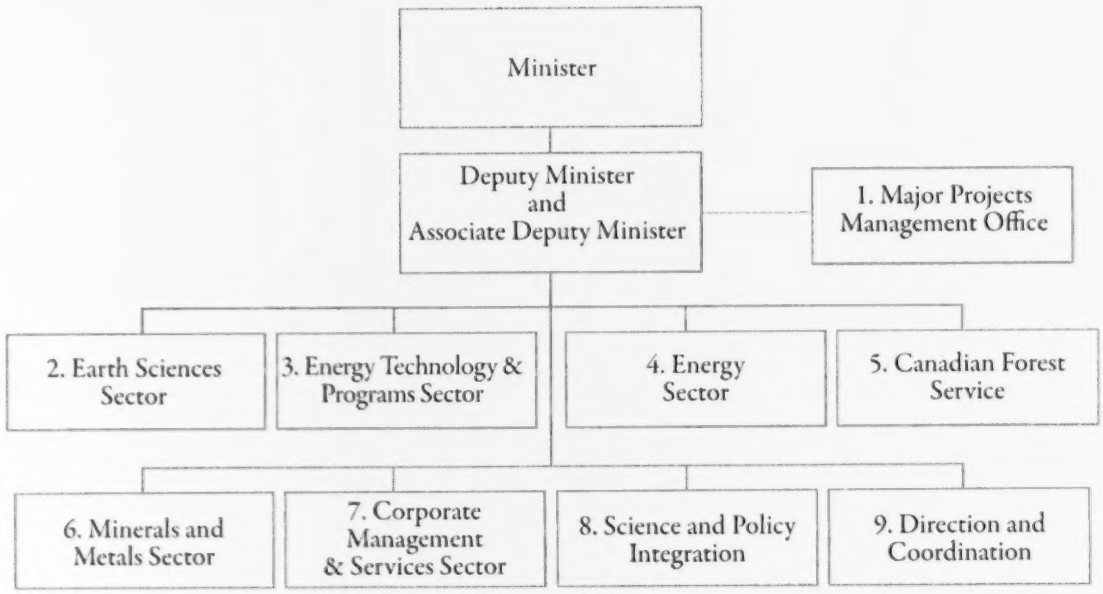
I submit, for tabling in Parliament, the 2008-09 Report on Plans and Priorities (RPP) for NRCan.

This document has been prepared based on the reporting principles contained in the *Guide to the Preparation of Part III of the 2008-09 Estimates: Report on Plans and Priorities and Departmental Performance Report*.

- It adheres to the specific reporting requirements outlined in the Treasury Board Secretariat (TBS) guidance.
- It is based on the department's strategic outcomes and program activities that were approved by the Treasury Board.
- It presents consistent, comprehensive, balanced and reliable information.
- It provides a basis of accountability for the results achieved with the resources and authorities entrusted to it.
- It reports finances based on approved planned spending numbers from the Treasury Board Secretariat.

Cassie J. Doyle
Deputy Minister

ORGANIZATIONAL CHART


Minister
Deputy Minister and Associate Deputy Minister
1. Major Projects Management Office
2. Earth Sciences Sector
3. Energy Technology & Programs Sector
4. Energy Sector
5. Canadian Forest Service
6. Minerals and Metals Sector
7. Corporate Management & Services Sector
8. Science and Policy Integration
9. Direction and Coordination

Accountabilities:

1. Assistant Deputy Minister, Major Projects Management Office
2. Assistant Deputy Minister, Earth Sciences Sector
3. Assistant Deputy Minister, Energy Technology & Programs Sector
4. Assistant Deputy Minister, Energy Sector
5. Assistant Deputy Minister, Canadian Forest Service
6. Assistant Deputy Minister, Minerals and Metals Sector
7. Assistant Deputy Minister, Corporate Management and Services Sector
8. Assistant Deputy Minister, Science and Policy Integration
   Associate Assistant Deputy Minister/Chief Scientist, Science and Policy Integration
9. Director General, Audit and Evaluation Branch
   Director General, Communications Branch
   General Counsel, Legal Services

Our Programs

NRCan manages its program delivery through three strategic outcomes and seven program activities. Most program activities are divided into smaller groups of sub-activities and sub-sub-activities that are designed to achieve the expected results that collectively contribute to the realization of the strategic outcomes.

Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians	Canada is a world-leader on environmental responsibility in the development and use of natural resources	Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada	
Economic Opportunities for Natural Resources	Clean Energy	Adapting to a Changing Climate and Hazard Risk Management	Internal Services (standardized across government)
Minerals and Metals, Markets, Investment, Innovation and Productivity	Domestic and International Clean Energy Policy	Mining, Infrastructure and Explosives Safety and Security	
Economic Market Value of Canada's Forests	Energy Efficiency and Alternative Transportation Fuels*	Forest Disturbances	
Canada's Forest Products in Global Markets	Energy Science and Technology*	Science and Knowledge are Used to Help Canadians Adapt to a Changing Climate*	
Innovation from Forest to Market	Materials for Production and Transportation of Energy and Energy-Efficient Vehicles	The Risk of Natural and Man-Made Hazards are Reduced*	
Geoscience Stimulates Exploration for Energy and Minerals*	Renewable Energy Programs*	Natural Resources and Landmass Knowledge for Canadians	
Domestic and International Energy Policy	Ecosystem Risk Management	Minerals and Metals Knowledge and Information	
Petroleum Resources Policy and Regulations	Strong Environmental Performance in Minerals and Metals	Forest Sector Innovation System	
Statutory Programs - Atlantic Offshore	Canada's Forest Ecosystems	International Influence	
Electricity and Renewable Resources Policy	Geosciences are Used to Understand Environmental Issues*	Basic Infrastructure is Provided to Support the Governing of Canada*	
Natural Resource-based Communities	Radioactive Waste Management*	Geomatics Canada Revolving Fund	
Minerals and Metals in Support of Communities			
Forest-based Communities			

Legend: Strategic Outcome; Program Activity; Program Sub Activity

* Sub-Sub Activities Not Listed

Program Activity Architecture (PAA) Crosswalk

NRCan received Treasury Board approval to modify its PAA for 2008-09. The table below provides a crosswalk for NRCan's 2007-08 planned spending to the new PAA.

	2007-08 Strategic Outcome and Program Activities				
	S.O. 1 – Canadians derive sustainable social and economic benefits from the assessment, development and use of energy, forest and mineral resources, and have the knowledge to mitigate environmental impacts and respond effectively to natural and man-made hazards				
2008-09 Strategic Outcomes and Program Activities	**Earth Sciences**	**Energy**	**Sustainable Forest**	**Minerals & Metals**	**Total 2007-08 Planned Spending**
S.O. 1 – Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians					
Economic Opportunities for Natural Resources	96.9	2,388.3	72.6	7.7	**2,565.6**
Natural Resource-based Communities	0.0	0.0	16.2	2.0	**18.2**
S.O. 2 – Canada is a world leader on environmental responsibility in the development and use of natural resources					
Clean Energy	0.0	354.6	0.0	36.0	**390.6**
Ecosystems Risk Management	15.0	141.5	23.4	0.9	**180.8**
S.O. 3 – Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada					
Adapting to a Changing Climate and Hazard Risk Management	43.7	0.0	115.6	7.5	**166.8**
Natural Resource and Landmass Knowledge for Canadians	80.3	0.0	26.0	3.6	**109.9**
Geomatics Canada Revolving Fund - Operational expenditures - Respendable revenue	3.6 (3.6)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	**3.6** **(3.6)**
Total 2007-08 Planned Spending ($M)	**235.9**	**2,884.4**	**253.9**	**57.7**	**3,431.9**

Voted and Statutory Items Listed in Main Estimates

($ millions)

Vote or Statutory Item		Main Estimates 2008-09	Main Estimates 2007-08
1	Operating expenditures *	762.9	709.3
-	Capital expenditures **	0.0	2.7
5	Grants and contributions ***	437.9	328.1
(S)	Minister of Natural Resources - Salary and Motor Car Allowance	0.1	0.1
(S)	Contributions to Employee Benefit Plans	54.6	54.4
(S)	Canada-Nova Scotia Development Fund	0.5	1.9
(S)	Canada-Newfoundland Offshore Petroleum Board	6.0	5.0
(S)	Canada-Nova Scotia Offshore Petroleum Board	2.9	2.9
(S)	Payments to the Nova Scotia Offshore Revenue Account	407.3	450.0
(S)	Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund	670.6	590.7
(S)	Geomatics Canada Revolving Fund - Operational expenditures - Respendable revenue	1.9 (1.9)	3.6 (3.6)
	Total NRCan	2,342.8	2,145.1

* Increased funding in 2008-09 is primarily due to the Clean Energy Agenda.

** A notable change in 2008-09 is the elimination of NRCan's Capital Vote and the renumbering of the grants and contribution Vote to 5 (formerly Vote 10) since a department's votes must be sequential. As a result, the capital expenditures are now included under Vote 1.

*** Increased funding in 2008-09 is primarily due to the new ecoENERGY for Biofuels contribution program.

Planned Spending and Full Time Equivalents

2008-2009 ESTIMATES

($ millions)	Forecast Spending 2007-08	Planned Spending 2008-09	Planned Spending 2009-10	Planned Spending 2010-11
Budgetary				
Economic Opportunities for Natural Resources *	1,270.7	**1,280.3**	1,164.3	1,113.8
Natural Resource-based Communities	16.4	**30.0**	19.5	19.5
Clean Energy	404.9	**571.7**	655.6	763.8
Ecosystem Risk Management	184.3	**227.4**	204.9	213.9
Adapting to a Changing Climate and Hazard Risk Management	183.2	**117.1**	71.9	69.7
Natural Resource and Landmass Knowledge for Canadians	109.1	**140.9**	122.1	106.3
Geomatics Canada Revolving Fund	3.6	**1.9**	1.9	1.9
Budgetary Main Estimates (Gross)	2,172.2	**2,369.3**	2,240.2	2,288.9
Less: Respendable Revenue	(27.1)	**(26.5)**	(25.6)	(25.6)
Total Main Estimates	2,145.1	**2,342.8**	2,214.6	2,263.3
Adjustments:				
2007-08 Supplementary Estimates (A) **	(1.7)	**0.0**	0.0	0.0
2007-08 Supplementary Estimates (B) ***	1,288.5	**0.0**	0.0	0.0
Other Adjustments****	0.0	7.2	20.9	24.2
Total Adjustments	1,286.8	7.2	20.9	24.2
Total Planned Spending	3,431.9	**2,350.0**	2,235.5	2,287.5
Less: Non-respendable revenue	(1,041.6)	**(1,084.2)**	(1,025.1)	(982.6)
Plus: Cost of services received without charge	36.6	**41.9**	41.8	42.0
Net Cost of Program	2,426.9	**1,307.7**	1,252.2	1,346.9
Full Time Equivalents (FTEs)	4,289	**4,470**	4,432	4,412

* Planned spending includes statutory programs – Atlantic offshore: $1,087.4M in 2008-09; $1,026M in 2009-10; and $984.1M in 2010-11.

** Major items included in the 2007-08 Supplementary Estimates (A): $3.6M to improve the performance of the regulatory system for major natural resource projects; $1.6M for the relocation and renewal of the CANMET Materials Technology Laboratory; ($1M) to support the restoration of Stanley Park, a National Historic Site in Vancouver, British Columbia; and ($0.5M) to support the ecological restoration of Point Pleasant Park in Halifax, Nova Scotia.

*** Major items included in the Supplementary Estimates (B): $1,150M for Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund; $188.6M for Newfoundland Fiscal Equalization Offset Payments; $5.5M in support of the Forest Industry Long-Term Competitiveness Strategy; $2.8M for real property health and safety projects; and ($52.8M) for Payments to the Nova Scotia Offshore Revenue Account.

**** In 2008-09, this includes: $2.8M for real property health and safety projects; $2M for biotechnology; $1.4M for international actions in support of the Clean Air Agenda, and $1M for an Atomic Energy of Canada Limited special project team. In 2009-10: $14.7M for the relocation of the Materials Technology Laboratory to Hamilton, Ontario; $2.8M for real property and safety projects; $2M for biotechnology; and $1.4M for international actions in support of the Clean Air Agenda. In 2010-11: $20.9M for the relocation of the Materials Technology Laboratory to Hamilton, Ontario; $2M for biotechnology; and $1.3M for international actions in support of the Clean Air Agenda.

NRCan develops, implements and delivers integrated policies, programs, and science and technology (S&T) for the sustainable development and responsible use of Canada's mineral, energy and forestry resources. The department uses its expertise in earth sciences to collect and disseminate information used to better understand Canada's landmass. It also maintains key roles related to the safety and security of people and natural resources, including security of natural resource infrastructure and supply.

NRCan's Minister is responsible for, or has responsibilities under, more than 30 Acts of Parliament. The core powers, duties and functions are set forth in the *Department of Natural Resources Act*, the *Resources and Technical Surveys Act*, and the *Forestry Act*. The remaining Acts set out the terms for the management of Crown lands and of Canada's natural resource policies, including energy and nuclear policy.

The department's work is concentrated in areas of core federal jurisdiction that fall within its legislated roles and responsibilities, which includes:

- national objectives related to economic development, environmental protection, supply security and resource-related health and safety;
- natural resource management on Crown lands, the North and offshore areas;
- uranium and nuclear power; and
- international and inter-provincial trade.

NRCan works towards achieving the following three strategic outcomes which are supported by its Program Activity Architecture (PAA):

- natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians;
- Canada is a world leader on environmental responsibility in the development and use of natural resources; and
- natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada.

Financial Resources ($M)

2008-09	2009-10	2010-11
2,350.0	2,235.5	2,287.5

Human Resources (FTEs)

2008-09	2009-10	2010-11
4,470	4,432	4,412

NRCan has identified the program priorities that are critical to the realization of its strategic outcomes over the planning period. These priorities stem from related issues of importance to Canadians, and shape our policies, programs and science and technology.

Priorities	Type*
1. Addressing climate change and air quality through science, technology and adaptation	previously committed
2. Enhancing Canada's forest sector competitiveness	previously committed
3. Supporting Canada's Arctic sovereignty through geoscience and mapping activities	ongoing
4. Improving regulatory performance for major natural resource projects	previously committed
5. Advancing Canada's resource interests and sustainability efforts in the Americas and globally	ongoing

* An ongoing priority has no end date; a previously committed priority has an estimated end date and was committed to in prior budgets or main estimates documents.

Program Activities by Strategic Outcomes

Program Activity	Expected Results	Planned Spending ($M)			Contributes to the following priority*
		2008-09	2009-10	2010-11	
Strategic Outcome 1 – Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians					2, 4 and 5
Economic Opportunities for Natural Resources**	Competitive national and international markets, stable economic opportunity and investment in natural resources	1,280.8	1,163.8	1,112.8	
Natural Resource-based Communities	Increased knowledge, skills and capacity to benefit from the evolving natural resource economy within resource-based communities (both Aboriginal and non-Aboriginal)	29.6	33.9	39.9	
Strategic Outcome 2 – Canada is a world leader on environmental responsibility in the development and use of natural resources					1, 2 and 4
Clean Energy	Increased energy efficiency, increased production of low-emission energy, and reduced environmental impacts associated with energy production and use	562.0	646.7	753.8	
Ecosystem Risk Management	Canada understands and mitigates risks to natural resource ecosystems and human health	226.6	204.0	212.7	
Strategic Outcome 3 – Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada					1, 2, 3 and 5
Adapting to a Changing Climate and Hazard Risk Management	Canada adapts to a changing climate and has the knowledge and tools to manage risks associated with natural hazards and hazards arising from human activities	111.9	66.7	64.2	
Natural Resource and Landmass Knowledge for Canadians	Government has the necessary natural resource and landmass knowledge and systems required to both govern the country and position Canada to play a leadership role in federal/provincial/territorial and international fora	139.1	120.4	104.1	
Geomatics Canada Revolving Fund	The demands by NRCan, other government departments and industrial clients for revolving fund products and services are met through full cost recovery	1.9 (1.9)	1.9 (1.9)	1.9 (1.9)	
Total NRCan		**2,350.0**	**2,235.5**	**2,287.5**	

* Priority 1 (Addressing climate change and air quality through S&T and adaptation; 2 (Enhancing Canada's forest sector competitiveness); 3 (Supporting Canada's Arctic sovereignty through geoscience and mapping activities; 4 (Improving regulatory performance for major natural resources project; 5 (Advancing Canada's resource interests and sustainability efforts in the Americas and globally).

** Planned spending includes statutory programs – Atlantic offshore: $1,087.4M in 2008-09; $1,026M in 2009-10; and $984.1M in 2010-11.

Natural resources have been an economic cornerstone in Canada throughout its history. They have contributed to the development of Canada as a modern industrial society generating wealth and a higher quality of life for generations of Canadians particularly in the hundreds of communities in every region located near resource deposits.

The predominant position of the Canadian natural resource sectors is compelling. In 2006, the sectors directly contributed to 13% of the Gross Domestic Product (GDP), 6.5% of the labour force and 47.4% of domestic exports which contributed $9[illegible] to Canada's trade surplus. These numbers are a result of Canada being a world leader in the safe, secure and reliable production of many important natural resource commodities. Canada is the world's largest uranium and potash producer, the second in nickel production and the third in natural gas, aluminium and diamond production. Our forestry endowment is the second largest on a per capita basis but we are first in forest product exports. Canada is second only to Saudi Arabia in proven oil reserves and may move from seventh to fourth place in oil production by 2015. Rising global demand and prices for some resource commodities combined with the fact that Canada's landmass contains significant undiscovered or undeveloped natural resources creates incredible future growth potential in the 21st century for our natural resource sectors.

While Canada's natural resource sectors hold a prominent global position and an optimistic future, merely possessing a rich resource endowment will not ensure economic success, a higher quality of life and a healthy environment for Canadians. Given that Canada's mineral and energy resources are declining, the way we harness and manage that endowment matters now more than ever. In the modern knowledge-based economy, the development of new innovative ideas, skills and technologies through science and technology investments holds the utmost importance across the value chain from exploration and extraction to end use. Our geoscience plays a central role in identifying and evaluating new energy and mineral resource deposits. Furthermore, the natural resource sectors and NRCan face many challenges including an increasingly competitive global market, impact of natural resources' activities on the environment and our Arctic sovereignty and various corporate challenges. NRCan is well placed to turn these challenges into opportunities along with the leadership and engagement of key stakeholders including private industry, provincial and territorial governments, the research and development sector, and Aboriginal and other local communities near resource projects.

Challenges

The ability to remain competitive will determine Canada's place in the global natural resources marketplace. Because of their rapidly growing populations and economies, countries like China and India are fuelling the rising global demand for natural resources and increasing commodity prices. As a net exporter of resources, this provides considerable opportunities for Canada. However, other resource rich countries who are major natural resource exporters – like Australia, Brazil, Russia and Sweden – are challenging Canada's share in existing and new markets because of their increased technological capacity, modern infrastructure, lower labour costs, economies of scale, and lower regulatory burdens. In order to remain globally competitive in this environment, Canada's natural resource sectors must raise their level of productivity that, although above the national average domestically, does not compare favourably

to international competitors. Meeting these challenges will require promoting Canada's international reputation as a safe, secure and reliable supply of natural resources and associated science and technology while encouraging better international standards, good governance and establishing new trading relationships.

Balancing economic growth, social needs and maintaining a healthy environment is the challenge of sustainable natural resource development and use. Growth in the natural resource sectors can generate wealth for Canadians but we must do so with the environmental footprint in mind.

A variety of environmental concerns related to resource development have become prominent in public discourse, particularly those related to climate change caused by the generation of greenhouse gas emissions. Canadians are also concerned about environmental changes in the North, air pollution, water quality and water use issues and the ensuing adverse effects on human health and quality of life. Natural disturbances such as pest infestations have severely impacted Canada's forests, and other unpredictable natural hazards, such as earth quakes, floods, forest fires, and landslides can cause significant damage. Due to its expertise in the earth sciences, NRCan is well-positioned to help Canadians develop the tools and knowledge needed to adapt to climate change and other environmental challenges.

While the challenges facing the natural resource sectors are complex and varied, the opportunities for growth and development are exciting. Sustainable development – at the heart of NRCan's mandate – presents opportunities to address these challenges through innovative public policy that emphasizes and integrates economic development, social responsibility and environmental leadership.

Departmental Response

Our Program Priorities

1. Addressing climate change and air quality through science, technology and adaptation — NRCan will contribute to the Government of Canada's ecoACTION[1] plan through the development of improved energy technologies that contribute to a cleaner, healthier environment by reducing greenhouse gas emissions and air pollutants. The department will help position Canada as a world leader on environmental responsibility in the development and use of natural resources through science, technology, programs, services, incentives and regulation aimed at increasing energy efficiency, the production of cleaner low emission energy and reducing the environmental impacts associated with energy use and production.

NRCan will also provide knowledge and tools for Canadians to better understand and adapt to a changing climate. More information on this priority can be found under program activities 2.1 and 3.1.

2. Enhancing Canada's forest sector competitiveness — Canada's forest sector is undergoing a major transformation as it faces a number of challenges and an increasingly competitive global market. The combined effects of the U.S. housing crisis, a strong Canadian dollar, global industry restructuring and the destructive mountain pine beetle infestation have created a very difficult business environment for the sector. In the context of this period of transition, NRCan is investing in the research and development of innovative technologies that will expand opportunities beyond the traditional product lines creating new international market opportunities. Central to this effort is the NRCan-led Forest Industry Long-Term

[1] Environment Canada is the lead department for this initiative.

Competitiveness Strategy. NRCan will also continue investing in forest communities to assist them to adjust and seize new opportunities from forest sector transition and will work with stakeholders to mitigate the effects of forest disturbances such as pest infestations and wildland fire. More information on this priority can be found under program activities 1.1, 1.2, 2.2, 3.1 and 3.2.

3. Supporting Canada's Arctic sovereignty through geoscience and mapping activities — Opportunities for social and economic development are emerging across the Arctic owing to increased access, high commodity prices and substantial land-based and offshore energy and resource potential. NRCan will continue its mapping activities in the North. Enhancing scientific research in the North, such as more comprehensive geoscience and related seabed mapping, will support Canada's sovereign Arctic rights and provide the necessary information to make a successful submission under the United Nations Convention on the Law of the Sea (UNCLOS) demonstrating Canada's rights over the extended continental shelf in the Arctic and Atlantic Canada and the natural resources it contains. This research will enable sustainable resource development in the North that will generate economic and social benefits, particularly for northern Canadians. Through these geoscience and mapping activities, NRCan will be making a significant contribution to the Government of Canada's northern strategy and efforts to assert Canadian Arctic sovereignty that were highlighted in the 2007 Speech from the Throne. More information on this priority can be found under program activities 1.1 and 3.2.

4. Improving regulatory performance for major natural resource projects — Given the high commodity prices and demand for many natural resources, the number of major resource projects has grown exponentially in recent years imposing strains on the regulatory system. In response, NRCan will be leading the Major Projects Management Office (MPMO) that will provide a single point of entry into the federal regulatory process for all stakeholders. More specifically, the MPMO will establish comprehensive project agreements for each project, clearly articulating the roles and responsibilities of each department and timeline-based performance targets. A monitoring and tracking system for major resource projects will allow stakeholders to transparently monitor the progress of individual projects through the regulatory process. Included in Budget 2007 and highlighted in the 2007 Speech from the Throne, the MPMO is an important step towards improving the management and performance of the federal regulatory system for major natural resource projects while better protecting the health and safety of Canadians and strengthening our system of environmental assessments. More information on this priority can be found under program activities 1.1, 2.1, and 2.2.

5. Advancing Canada's resource interests and sustainability efforts in the Americas and globally — To remain competitive and secure access to global resource markets, Canada's natural resource sectors must be prepared to respond and adapt to changing conditions in the global marketplace and international policies. This year, NRCan and the Government of Canada are strategically pursuing its natural resource policy objectives abroad by fostering global, regional and bilateral engagement. These efforts will receive particular focus in the Americas, a region where the Speech from the Throne called for Canada to take a pro-active role. Through bilateral and multilateral engagement, NRCan and its federal partners and non-government organizations, will pursue a number of trade and investment agreements, the transfer and export of Canadian science and technology, bilateral technical assistance, development

of sustainable international standards and governance practices and the advancement of corporate social responsibility. These efforts will build and promote Canada as a safe, secure, and reliable source of natural resources as well as a preferred partner in providing or developing innovative science and technology solutions for sustainable resource development and use. More information on this priority can be found under program activities 1.1, 2.1 and 3.2.

Our Management Priorities

In the context of the challenges and opportunities facing the natural resource sectors and modern public sector management, NRCan is working to become a more integrated, knowledge-based and results-oriented organization. To this end, the department will begin implementing a natural resources policy framework that will allow it to shift from a sectoral approach to a more integrated model where the economic, environmental, and social needs of Canadians are paramount. The framework will encourage collective leadership, innovative collaboration and information sharing across the department and with stakeholders in pursuit of common goals. NRCan is also strengthening its planning processes through the implementation of an integrated "one department planning approach".

In recognition of the renewed importance of science and technology in a knowledge-based economy, NRCan is developing a science and technology strategy that, aligned with the Government of Canada's *Advantage Canada* strategy, aims to create a competitive Canadian advantage in entrepreneurship, knowledge and skilled people through science and technology. An integrated natural resources policy framework and other management priorities will enable the department to make optimal use of all of its skills and tools to address the priorities of Canadians.

NRCan and the public service as a whole are facing unprecedented human resources and talent management challenges arising from an aging workforce, a competitive labour market, and critical skill shortages. In response to these challenges, NRCan has created a Human Resources Renewal Committee that will set the department's strategic direction for talent management. The department is already beginning to implement strategies for corporate-wide talent management; fostering a learning environment; a quicker and more collective approach to staffing across the department; and enhanced recruitment of younger professionals and other highly-skilled personnel to fill mission-critical and other specialized positions.

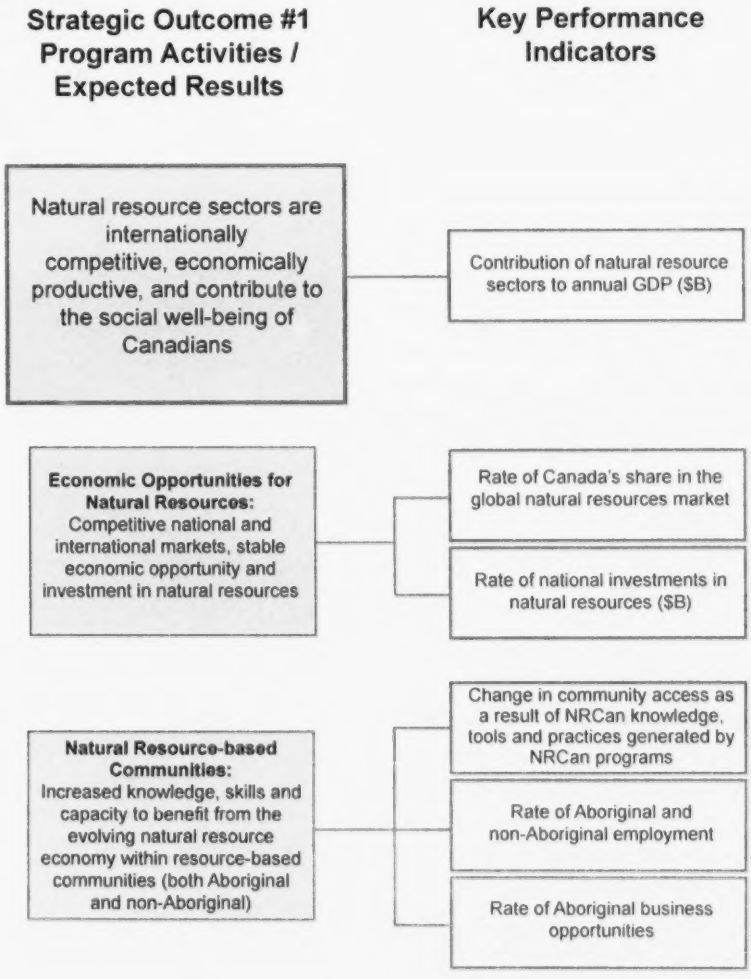
NRCan will be faced with very significant real property challenges over the next five years. By objective standards, the inventory is considered to be very tired; the average age of assets is 45 years. A large majority of these assets have never received a full renovation treatment typically undertaken when a building exceeds 25 years of age. With challenges come opportunities, and the management of real property within NRCan is an area where we are well-positioned to continue taking advantage of our current strengths such as: a long term capital plan; a well-developed real property management framework; strong leadership; a Real Property Strategy for the National Capital Region; abundant use of available tools for supply and demand planning; and supportive processes.

Another management priority is to create formal administrative structures to better integrate and manage the coordination of the natural resources portfolio. The structures will be tailored to specific portfolio roles and responsibilities as well as requirements. They will enhance portfolio coordination by fostering coherent policy implementation, good governance, communication, information sharing and accountability.

This section provides information about NRCan's results structure (Strategic Outcomes and Program Activity Architecture). This new structure reflects a more horizontal approach to program delivery and fosters collective leadership across the department.

NRCan has identified a suite of key performance indicators (KPIs) that will measure whether or not the strategies and initiatives undertaken under each strategic outcome and program activity are achieving desired results. The KPIs represent a significant improvement in NRCan's ability to set targets against expected results aligned to strategic outcomes.

Strategic Outcome 1 - Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians


Strategic Outcome #1 Program Activities / Expected Results
Key Performance Indicators
Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians
Contribution of natural resource sectors to annual GDP ($B)
Economic Opportunities for Natural Resources: Competitive national and international markets, stable economic opportunity and investment in natural resources
Rate of Canada's share in the global natural resources market
Rate of national investments in natural resources ($B)
Natural Resource-based Communities: Increased knowledge, skills and capacity to benefit from the evolving natural resource economy within resource-based communities (both Aboriginal and non-Aboriginal)
Change in community access as a result of NRCan knowledge, tools and practices generated by NRCan programs
Rate of Aboriginal and non-Aboriginal employment
Rate of Aboriginal business opportunities

Operating Environment

Since Canada is a net exporter of resources, the growth in global demand implies huge economic gains for our nation, now and in the future. The energy supply presents strong opportunities from oil sands to offshore exploration and extraction, exports of natural gas, gas hydrates and hydroelectricity production and exports.

While rising commodity prices and increasing global demand are benefiting much of the natural resource sectors, Canada's forest sector is facing a challenging period of transformation that is required to remain competitive in an environment of increased global competition and changing economic conditions. On the minerals and metals side, exploration spending has increased strongly in recent years. At the same time, the prolonged upward cycle driving this activity is beginning to show signs of moderating. Canada's industry also faces several key challenges, including those arising from a strong Canadian dollar and from increasing global competition.

To maintain Canada's competitive position, we must address some critical strategic and management issues in the natural resource sectors to ensure our continued contribution to the economic advantage of Canada. Among other things, the natural resource sectors must remain innovative and competitive in the global economy, advance our resource interests and responsible sustainability efforts in the Americas and other emerging markets, and ensure that improvements to the management and performance of the federal regulatory system are achieved.

The growing importance of natural resources in the global economy holds tremendous promise for communities close to areas where resources are located, including Aboriginal and northern communities. Strategic investments in natural resource-based communities represent a commitment to long-term economic sustainability and growth by the natural resource sectors. Local economic benefits are mainly generated by employment in natural resource-related activities. However, these communities can also experience negative impacts when local resource industries face restructuring, low commodity prices, declining metal reserves or outbreaks of insects, disease or forest fires. Ensuring the viability of rural resource-based communities in the face of increasing urbanization, an aging population and the exodus of young people from rural areas will continue to be a challenge.

Planned Financial and Human Resources by Program Activity

Program Activity	2008-09		2009-10		2010-11	
	$M	FTEs	$M	FTEs	$M	FTEs
1.1 Economic Opportunities for Natural Resources*	1,280.8	1,056	1,163.8	1,032	1,112.8	1,031
1.2 Natural Resource-based Communities	29.6	130	33.9	129	39.9	129
Total	**1,310.4**	**1,186**	**1,197.7**	**1,161**	**1,152.7**	**1,160**

* Planned spending includes statutory programs – Atlantic offshore: $1,087.4M in 2008-09; $1,026.6M in 2009-10; and $984.1M in 2010-11.

Program Activity 1.1 - Economic Opportunities for Natural Resources - Planned spending for 2008-09: $1,280.8M

(includes $1,087.4M related to statutory programs - Atlantic offshore)

This program activity is designed to promote innovation, investment, and the enhancement of the competitiveness of Canada's natural resources and related products industries through the provision of know-how and tools, including base geoscience information, along with trade promotion and the removal of barriers to Canadian investment, at home and abroad. This group of programs also delivers policies, regulations and legislative work to manage federal responsibilities associated with Canada's oil and natural gas supply, protecting the critical energy infrastructure, and managing statutory programs for the Atlantic offshore.

DID YOU KNOW?

By almost any measure, the direct contribution of the natural resource sectors to the Canadian economy is substantial:

- In 2006, Canada's natural resource sectors contributed 13 percent to Canada's real GDP, ranking second only to the financial services sector in terms of importance. The contribution of the resource sectors to the Canadian economy has remained steady for at least the past 25 years (the period when comparable data are available) despite structural changes to the Canadian economy.
- As many as 350 communities across Canada are dependent on forestry, while another 100 are highly reliant on the mining industry.
- Almost one million Canadians are directly employed in the natural resource sectors – making these sectors the second largest employer in Canada and the largest private sector employer of Aboriginal people.
- Canada is a trading nation, and in 2006, the resource sectors accounted for 47.4 percent of total Canadian goods exported, contributing to a total $91.4 billion trade surplus.
- In 2006, over 27 percent of new capital investments were in the natural resource sectors ($80.7B).
- Foreign direct investment in the natural resource sectors totalled $139B, representing 31 percent of total foreign direct investment.
- From 1997-2004, labour productivity in most areas of the resource sectors outpaced the Canadian average of 1.75 percent productivity growth per year with minerals and metals at 5 percent, forestry at 2.5 percent and energy at -1 percent.

Source: NRCan, Statistics Canada

Minerals and metals, markets, investment, innovation and productivity: Canada is an attractive destination for mineral investment and its minerals and metals industries are productive and have secure access to international markets and resources

Due to a favourable investment climate, which includes a supportive mining tax regime, Canada remains the top recipient of exploration investment and the pre-eminent centre for raising equity capital for mining worldwide. Overall, some 80 percent of Canada's production of metals is exported. In summary, supporting investment and maintaining access to international markets is critical to the ongoing competitiveness of the sector.

To support ongoing efforts to make Canada an attractive destination for mineral investment, NRCan is working with provinces and territories in areas of shared priorities. Through the federal-provincial-territorial mines ministers, joint work on key issues include improving regulatory efficiency and performance, which will be supported by the implementation of NRCan's Major Projects Management Office. Joint work is also ongoing on approaches to improving the competitiveness of the tax system in support of mining on issues related to Aboriginal engagement, and on skills and capacity challenges to address labour shortages in the industry. The results of this collaborative work will be presented to the federal-provincial-territorial mines ministers in September 2008. NRCan will also contribute to more efficient mineral resource management and to opening up new opportunities for mineral development in Atlantic Canada through the implementation of the *Donkin Coal Block Development Opportunity Act*, jointly with the province of Nova Scotia.

Innovative approaches and investment in S&T make essential contributions to the productivity of the mining and metals sector. Current approaches to this include NRCan's leadership with provinces, territories, universities and industry, in the development of the Canadian Mining Innovation Council, a multi-stakeholder, multi-sectoral partnership to strengthen mining research, innovation and competitiveness across Canada This Council will lead in developing a pan-Canadian research and innovation strategy during the next planning cycle. In order to establish a cluster of expertise for increased value-added industries with a focus on metals for the automobile industry, NRCan will also continue with the rejuvenation and relocation of its Materials Technology Laboratory from Ottawa to Hamilton's McMaster University during this planning period.

Internationally, NRCan will work to maintain Canada's access to markets by promoting effective models for managing environmental and health risks associated with minerals and metals while continuing to benefit from market-driven trade and investment flows. NRCan will also partner with the Department of Foreign Affairs and International Trade and the Canadian International Development Agency to develop an approach to building the mineral resources governance capacity for developing countries in relation to their economic, social and environmental challenges. An initial focus will be the Americas. As an example, following on the Canada-Chile Partnership Framework signed by the Prime Minister of Canada and the President of Chile, both countries committed to enter into a memorandum of understanding on minerals and metals with Chile covering a number of areas, including environmental S&T and cooperation on sustainable development and other areas of mutual interest.

How will we measure performance?

Global ranking in mineral exploration spending.

DID YOU KNOW?

Canada is facing unprecedented growth in the natural resource sectors – as much as $300 billion in new potential developments over the next decade. A current challenge to realizing Canada's natural resources potential is the inefficiency of the federal regulatory processes and systems, particularly as they apply to large projects. Addressing this barrier is a departmental priority over the planning period. Through its Major Projects Management Office, NRCan will improve the accountability, consistency, and predictability of the federal regulatory process by establishing a single regulatory portal access for all stakeholders. This single portal will improve the management and performance of the federal regulatory process, help strengthen our system of environmental assessments, and will also help improve the Aboriginal consultation process.

Market value, global markets and innovation: Innovation is robust, global markets are expanded, and the economic market value of Canada's forests products is increased

Forest sector sustainability and competitiveness continues to be a high priority for the department and all levels of government. Canada's forest sector is facing the challenges of a strong Canadian currency, a collapsed U.S. housing market and generally lower commodity prices. Global competitors are taking advantage of access to cheaper wood, faster growing trees, lower-cost labour and lighter regulatory burdens. A departmental priority over the planning period is to make significant investments that will lead to the development of innovative technologies and expanded access to new and existing markets.

Under the Forest Industry Long-Term Competitiveness Strategy (FILTCS), NRCan will promote forest sector innovation and investment. Working with the national forest research institute – FPInnovations – the department will support the delivery of the Transformative Technologies Program (TTP) which focuses on pre-competitive, non-proprietary research to address the development and adaptation of emerging and breakthrough technologies. The TTP will lead to the development of new opportunities for the innovative use of Canada's forest fibre and expand the sector's future market opportunities.

NRCan's Canadian Wood Fibre Centre will work with FPInnovations and national research partners on identifying desirable fibre attributes. Linking emerging science and technology in fibre production with emerging market opportunities is critical to maximizing the value of Canadian wood fibre.

NRCan will also make investments under FILTCS aimed at expanding market access for Canada's forest products. The Canada Wood Program will focus on developing offshore markets through the promotion of Canadian wood products and by providing technical assistance to address international market access and regulatory issues. The North American Wood First Initiative will support efforts to increase the use of wood products in North American non-residential construction (i.e., schools, hospitals, etc.). The Value to Wood Program, a national research and technology transfer program, will focus on the development of value-added wood product opportunities for enhancing

the competitiveness and productivity of the Canadian secondary-manufacturing wood sector.

The department will continue to provide knowledge and expertise toward the reduction of tariff and non-tariff trade barriers that limit foreign market access for Canadian forest exporters. NRCan will provide support to the Canadian Council of Forest Ministers' International Forestry Partnership Program, which increases international awareness and market acceptance for Canadian sustainable forest products.

NRCan enhances the competitiveness of the Canadian forest sector through the provision of economic analysis to inform and guide policy development and influence decision-making. In addition to monitoring the economic health of the forest industry, the department develops analysis on the viability of diversification opportunities such as the production of forest biomass, bioenergy and bioproducts.

How will we measure performance?
Forest sector research and development investments and stakeholder collaboration in research programs; value of stakeholder investments and in-kind contributions leveraged for transformative technologies; enhanced knowledge transfer and uptake by the forest sector; the increase of Canadian wood exports to offshore markets; the increase in annual volume of lumber and panel consumption on non-residential construction; the increase in percentage of stakeholder confidence that market access has improved; and the ratio of the economic value of Canadian forest-products to the volume of Canadian timber harvested.

Geoscience stimulates exploration for energy and minerals: New geoscience technology and mapping of Canada lead to further industry exploration and the discovery of new energy and mineral resources

A priority for the department is to develop and implement new geoscience technology and mapping of Canada leading to further industry exploration and the discovery of new energy and mineral resources, thereby supporting the Government's Arctic agenda and the economic development in the North, as well as continued prosperity in the South. The department will contribute to new opportunities for clean energy, including carbon capture and storage, a renewed look at geothermal energy as part of Canada's future energy mix, an assessment of the economic opportunities for gas hydrate production in Canada, and continued assessment of conventional and unconventional resources in western Canada and frontier areas.

The department will support the Government's northern agenda in terms of environmental protection, and encourage energy and mineral resource development through programs such as the Northern Minerals Resource Development Program. Moreover, it will provide key geoscience information for the Mackenzie Valley Pipeline environmental assessment that will be used to support decisions regarding the future of the project.

How will we measure performance?
Evidence that geoscience data is being used for investment and land-use decisions.

Domestic and international energy policy: Policy analysis and advice that supports the sustainable development of Canada's energy sector

As Canadians enjoy an abundant and diverse supply of energy, the department will continue to support federal multi-faceted actions on energy policy by providing consistent, evidence-based and timely advice and recommendations. It will also continue to support federal-provincial-territorial energy relations, economic and fiscal analysis, forecasting, and will provide policy analysis, advice and recommendations on other cross-cutting energy issues.

While increasing international concerns over energy security and rising energy prices have resulted in a boom for Canada's energy sector and our economy, there is also a growing need to address global environmental issues. Striking a balance between economic prosperity and environmental stewardship requires collaboration among partners. At the 2007 Council of Energy Ministers meeting, federal-provincial and territorial ministers discussed emerging opportunities and challenges facing the Canadian energy sector. Ministers identified three key priorities: regulatory efficiency; energy technology development and innovation; and energy efficiency. Ministers committed to increasing their collaborative efforts in the priority areas and to establish a work plan before the next meeting in Saskatoon in September 2008. They also recognized and affirmed the importance of developing climate change adaptation strategies and gave their support for concluding the Energy Chapter of the Agreement on Internal Trade.

Internationally, Canada will continue to support measures to enhance global energy security by promoting transparent markets, diversity in energy supply, strong governance, and advancement of Canada's role as an energy model. It will focus its policy efforts in areas that have seen sustained positive results, including key bilateral energy relations, nuclear energy, and science and technology collaboration. This is supported through strategic engagement at the multilateral and regional level, through fora such as the G8, International Energy Agency, and the Asian Pacific Economic Co-operation Energy Working Group.

With the increasing importance of Canada's energy security and North American energy relations, Canada will continue its successes in energy cooperation. This includes bilateral fora such as the Canada-US Energy Consultative Mechanism, and the Canada-Mexico Partnership Energy Working Group which examines the potential for cooperation in areas such as electricity generation and offshore oil and gas. The increasing importance of energy security will also play a lead role in the future as Canada maintains commitments under the North American Energy Working Group under the auspices of the Security and Prosperity Partnership.

How will we measure performance?
Canada's energy contribution to GDP and Canada's energy exports.

Petroleum resources policy and regulations: A fair, efficient and globally competitive oil, natural gas and petroleum products marketplace that is governed by a modern regulatory regime and consistent with Canada's social and environmental goals

NRCan aims to ensure a fair, efficient and globally competitive oil, natural gas and petroleum products marketplace by providing relevant, reliable and timely policy advice and effective management for the approval processes for future energy projects anticipated to total several billions of dollars in new investment. Regulatory performance improvement will facilitate responsible and sustainable growth in Canada's natural resource sectors and regulatory approval for many projects will be facilitated through the newly created Major Projects Management Office.

NRCan will work to ensure that projects such as the Keystone, Clipper, Southern Lights, Mackenzie Valley, Alaska Highway pipelines and other projects move efficiently through their regulatory approvals processes. The department was praised for its efficient handling of the Brunswick Pipeline and Deep Panuke natural gas projects.

S&T related to Canada's offshore oil and gas sector will continue to support the sustainable development of Canada's offshore petroleum resources by fostering advances in offshore safety and security and supporting the development of associated legislation.

By co-chairing groups, including the Frontier and Offshore Regulatory Renewal Initiative and the Council of Energy Ministers' regulatory working group, NRCan is committed to encouraging investment in Canada's petroleum sector by improving the regulatory framework in which it operates.

The department has statutory responsibilities under the *National Energy Board Act, the Accord Acts,* the *Canada Oil and Gas Operations Act* and is responsible for preparing and reviewing contingency plans for potential use during an oil supply shortage pursuant to the *Energy Supplies Emergency Act*. Oversight of these statutory responsibilities ensures Canada is well-positioned to ensure its energy security during challenging times to sustain demands inland and abroad.

Through the Fuel Focus and other avenues, NRCan provides timely, relevant and accurate information to its stakeholders and the public concerning crude oil, natural gas and refined petroleum products. Such information is designed to impart transparency regarding the supply and pricing of these commodities and to enhance public awareness, understanding and create opportunities for economic growth.

How will we measure performance?
Provision of timely, reliable and relevant regulatory advice and information; and the effective management of regulatory projects and responsibilities.

Electricity and renewable resources policy: Sustainable development and safe and reliable delivery of electricity with a reduced environmental footprint

NRCan's overall objectives are to support the strict, science-based regulation of domestic and international nuclear activities while promoting international cooperation to: advance the safe, secure and environmentally-responsible management of radioactive wastes within the policy framework for radioactive wastes management; encourage the substitution of low-emission nuclear for high-emitting electricity source; and maximize opportunities for Canada's nuclear industry. In this regard, the department will implement a nuclear policy framework which will facilitate increased public confidence in nuclear energy and the institutions which manage it.

On October 26, 2007, a Bill was introduced in Parliament to replace the current *Nuclear Liability Act*. The department will provide support to the parliamentary process and carry out the work necessary to bring the new legislation into force. In particular, we will work with the Department of Justice to develop the regulations necessary for implementation and to negotiate an insurance framework with the nuclear insurance industry.

Following the Government's decision on the long-term management of nuclear fuel waste, the Nuclear Waste Management Organization (NWMO) is preparing a plan for implementing the Adaptive Phased Management approach. The department will provide continued oversight on the NWMO's activities and provide recommendations to the Minister on the funding formula which the NWMO will propose in its 2007 annual report.

Moreover, the department will conduct a full review of the structure of Atomic Energy of Canada Limited to determine if the existing structure is appropriate in a changing marketplace. The review will determine what changes, if any, are required and will be conducted by a dedicated team that will include outside experts.

How will we measure performance?
Index of electricity reliability; increase of use and deployment of renewable energy technologies; effective oversight of radioactive waste management; implementation of federal radioactive waste management and decommissioning programs; and progress in developing draft regulations under the proposed *Nuclear Liability and Compensation Act*.

Program Activity 1.2 - Natural Resource-based Communities - Planned spending for 2008-09: $29.6M

The program activity is targeted to increasing Canada's knowledge of the impacts of the resource sectors' evolution on communities that have a substantial reliance on resource-based industries and to improve the capacity and knowledge for increasing the number of opportunities through value-added products and services. This group of programs is designed to improve the social well-being of Canadians. It is also about promoting Aboriginal and non-Aboriginal participation, improving skills, capacity and community stability.

Minerals and metals in support of communities: Canada's minerals and metals industries contribute to vibrant regions and communities, including Aboriginal communities

In Canada, a number of rural and remote regions and communities have developed strong and mutually beneficial relationships over the past years. Mining operations provide a viable source of employment and sustainable development for those communities that are in close proximity to existing and potential mines.

In support of the economic vibrancy of Canadian regions and communities, including Aboriginal communities, NRCan will participate, over the planning period, in the annual Federal-Provincial-Territorial Mines Ministers Conference which has established skills and capacity shortages as a priority. Working with existing sector councils, ministers agreed to undertake a feasibility study to examine joint approaches to develop concrete, practical results to address skills and capacity issues faced by key resource sectors. They also agreed to work cooperatively to implement initiatives to support the sharing of accurate labour market information, improve inter-provincial mobility of mining sector workers and develop information tools to increase Aboriginal participation in the mining industry. To this end, NRCan is also working closely with the Mining Industry Human Resource Council and other partners to develop a human resource guide for Aboriginal communities, to help them build their capacity and take advantage of employment and other opportunities in exploration and mining.

Furthermore, the department will support the ongoing economic viability of mining communities by developing mining, processing and environmental technologies that will increase the availability of minerals and metals for Canada's smelters. For example, work is underway by NRCan to increase the competitiveness of Canadian smelters by improving their ability to process concentrates that contain undesirable contaminants.

How will we measure performance?
Percentage of Aboriginal peoples on Canada's mining workforce.

Forest-based communities: Public policy facilitates opportunities for forest-based communities

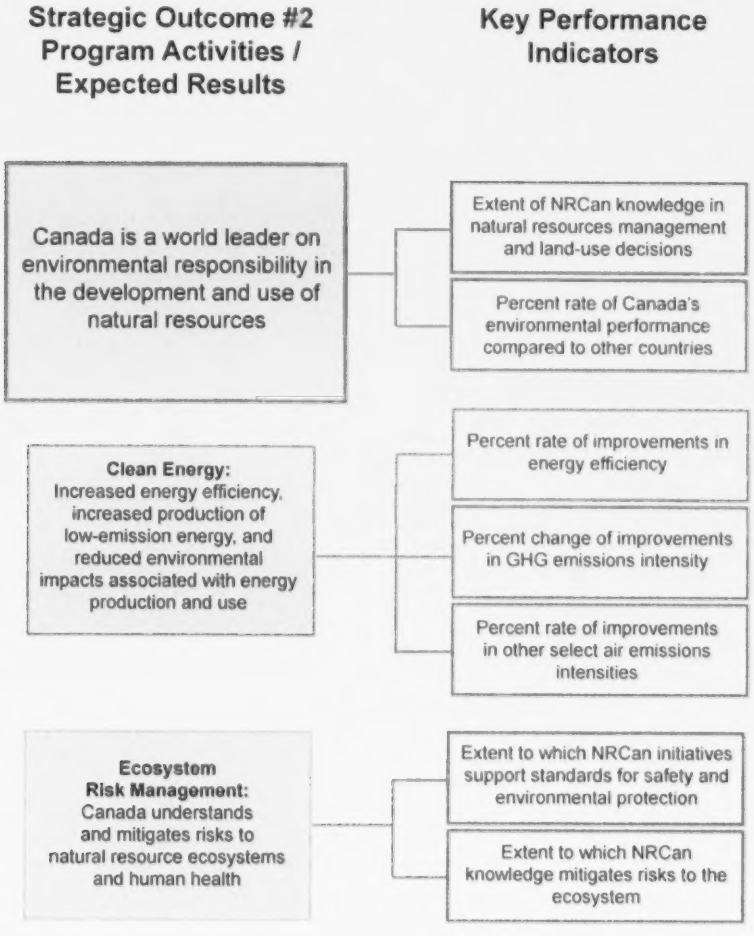
Canada's forest-based communities are currently facing difficult challenges as a consequence of forest industry restructuring and transformation, an aging population, changing markets, increased international competition, and major natural disturbances such as wildland fire and insect infestations. NRCan has two key capacity-building programs that assist forest-dependent communities to seize forest-based opportunities and address industry transition challenges: the Forest Communities Program and the First Nations Forestry Program.

Since its launch in July 2007, the new 5-year $25 million Forest Communities Program has entered into long-term funding arrangements with 11 local community organizations from across Canada to develop and share new knowledge, tools and best practices, in such areas as innovative forest tenure arrangements, the valuation of ecological goods and services, bioenergy, and youth engagement in forestry. In 2008-09, in addition to community level projects, the program will expand to support national and international level initiatives with federal partners, provincial governments and non-government organizations that share common interests and objectives.

The First Nations Forestry Program, a joint initiative funded by NRCan and Indian and Northern Affairs Canada (INAC), supports capacity-building projects that assist First Nations to sustainably manage their forest resources and participate in forest-based opportunities, both on and off reserve. This longstanding partnership program, which secures matching funding and participation from industry, First Nations governments and businesses, and provincial and territorial governments, supports over 150 projects annually. Typical projects include training in forest management planning, inventorying of forest assets, firefighting certification, and business feasibility assessment. The program has operated since 1996, and in 2008-09, NRCan and INAC will be developing options for succession programming, aligned with the Government's economic development strategies and priorities for Aboriginal communities.

How will we measure performance?
Increased forest community use of knowledge, tools and practices generated by NRCan; and increase in community policy capacity and engagement.

Strategic Outcome 2 -
Canada is a world leader on environmental responsibility in the development and use of natural resources


Strategic Outcome #2
Program Activities /
Expected Results
Key Performance
Indicators
Canada is a world leader on environmental responsibility in the development and use of natural resources
Extent of NRCan knowledge in natural resources management and land-use decisions
Percent rate of Canada's environmental performance compared to other countries
Clean Energy:
Increased energy efficiency, increased production of low-emission energy, and reduced environmental impacts associated with energy production and use
Percent rate of improvements in energy efficiency
Percent change of improvements in GHG emissions intensity
Percent rate of improvements in other select air emissions intensities
Ecosystem
Risk Management:
Canada understands and mitigates risks to natural resource ecosystems and human health
Extent to which NRCan initiatives support standards for safety and environmental protection
Extent to which NRCan knowledge mitigates risks to the ecosystem

Operating Environment

The development and use of natural resources is a cornerstone of our economic prosperity. NRCan plays several key roles in support of Canada's aspirations to develop and use its resources in a sustainable manner. However, there are often adverse environmental consequences associated with the development and extraction of these resources that must be addressed.

Within the Clean Energy program activity, NRCan contributes to Canada's ecoACTION plan to reduce greenhouse gas and air

pollutant emissions through the delivery of the ecoENERGY suite of initiatives. Within the Ecosystem Risk Management program activity, NRCan develops and disseminates authoritative and timely ecosystem and geoscience knowledge, and discharges the federal government's responsibilities for the management of historic radioactive wastes.

In pursuing its work under these program activities, NRCan maintains and relies upon partnerships with a wide array of stakeholders: other federal government departments, provincial and territorial governments, First Nations, private indutry, individual citizens, non-governmental organizations, and other national governments in a wide variety of international fora. Effective management of this network of stakeholders is a critical success factor for NRCan[2]. This involves:

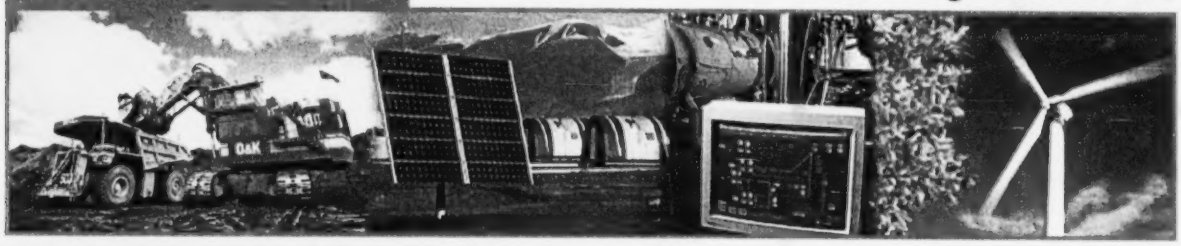
- establishing and delivering upon expectations, including formal service level standards, in particular for the regulation of major natural resource projects (one of the five NRCan priorities for fiscal 2008-09);
- understanding and accommodating diverse, values-based points of view on resource development issues;
- effectively advocating for the use of sound science information and analysis in resource development decision-making;
- effectively advocating Canada's national and international interests in the resource sectors, including increasing international regard for, and implementation of responsible environmental stewardship; and leveraging federal resource sectors science and technology spending through effective and efficient partnerships with private industry and with the provinces.

Planned Financial and Human Resources by Program Activity

Program Activity	2008-09		2009-10		2010-11	
	$M	FTEs	$M	FTEs	$M	FTEs
2.1 Clean Energy*	562.0	1,307	646.7	1,312	753.8	1,309
2.2 Ecosystem Risk Management	226.6	492	204.0	492	212.7	493
Total	788.6	1,799	850.7	1,805	966.5	1,803

* Increased funding is primarily due to the ecoENERGY for Biofuels program.

[2] Several key issues within this broad critical success factor are formally risk managed via an Integrated Risk Management (IRM) framework.



Program Activity 2.1 - Clean Energy
Planned spending for 2008-09: $562.0M

Addressing climate change and air quality through science and technology and adaptation is a priority for the department. This program activity is engaged in the development and delivery of energy science and technology, policies, programs, legislation and regulations to reduce greenhouse gas (GHG) and air pollutant emissions and other environmental impacts associated with energy production and use.

Energy production and use are the sources of the majority of air pollution and greenhouse gas emissions in Canada: 85 percent of smog-causing nitrogen oxide emissions; 46 percent of acid rain-causing sulphur dioxide; and 85 percent of greenhouse gases. Action in this sector is, therefore, an important element of the Government's ecoACTION plan.

Taken together, NRCan's clean energy activities are designed to reduce greenhouse gas and air pollutant emissions from both the production and use of energy. The objectives are to improve energy conservation and energy efficiency in every sector of the Canadian economy; accelerate the development and market readiness of technology solutions to reduce environmental impacts associated with the production and use of energy; and increase the production of low-impact renewable energy.

Domestic and international clean energy policy: Clean energy policy analysis and advice that promotes reduction in emissions of air pollutants and greenhouse gas emissions and that promotes Canada's position in international fora

In 2008-09, NRCan will continue to provide advice, analyze policy options and make recommendations in support of the development and implementation of domestic energy-related environmental policy. The department will work closely with Environment Canada as the Government finalizes and implements the Regulatory Framework for Industrial Air Emissions. The framework will require, through mandatory national regulation, reductions in GHG and air pollutant emissions from major industrial sources, including oil and gas production and electricity generation.

Further, NRCan will contribute to the implementation of the Horizontal Management, Accountability and Reporting Framework (HMARF) for the Clean Air Agenda, and serve as lead department on clean energy programming. Under the HMARF, NRCan is responsible for developing and implementing energy efficiency regulations and delivering programs in the areas of clean energy, clean transportation, adaptation, and international actions. In 2008-09, NRCan will continue to participate in interdepartmental activities to ensure effective management of the Clean Air Agenda and lead the

management of the clean energy theme within the Agenda. It will also report on the progress of implementation and level of alignment of its programs and the clean energy theme with the Government's environmental priorities and objectives.

Moreover, NRCan will continue to be engaged with Environment Canada and other departments on issues surrounding climate change and international air pollution. This will include continued involvement in the G8 dialogue on climate change and clean energy in Japan in 2008, building on successes seen in previous years at Gleneagles and Heiligendamm. NRCan will further align Canada's international climate change, energy and natural resource interests through its involvement with other international bodies, including the Intergovernmental Panel on Climate Change, the OECD Annex 1 experts group, the Carbon Sequestration Leadership Forum, and the Major Economies Meeting.

How will we measure performance?
Canada's emissions intensity (carbon dioxide emissions from fuel combustion per unit of GDP).

Energy efficiency and alternative transportation fuels: Improved energy efficiency of all sectors and increased production and use of alternative transportation fuels in Canada

Canadians spent almost $152 billion in 2005[3] heating and cooling buildings, as well as operating appliances, vehicles and industrial processes. Between 1990 and 2005, primary energy use increased by 27.0 percent. Without improvements in energy efficiency made to buildings and equipment, and the changes in the behavior of energy users during the past several decades, the increases in energy use would have been much higher.

The goal of the ecoENERGY suite of energy efficiency promotion programs and regulatory improvements is to support continued progress in the energy efficiency of all sectors, and increased production and use of alternative transportation fuels in Canada.

- ecoENERGY Retrofit is a $220 million program to encourage retrofitting by homeowners, small and medium-sized businesses, public institutions and industrial facilities. This program provides both financial support, and authoritative information.
- ecoENERGY for Buildings and Houses is a $61 million program to encourage the construction and operation of more energy-efficient buildings and houses using complementary activities such as rating, labelling and training and other tools to raise awareness.
- ecoENERGY for Industry is a $18 million program to encourage energy-saving investments and the exchange of best practices information with Canada's industrial sector.
- ecoENERGY for Fleets is a $22 million program to reduce fuel use by on-road fleet vehicles and related costs, air pollutants and GHG emissions through training, education, and the sharing of best practices.
- ecoENERGY for Personal Vehicles is a $21 million program to provide Canadian motorists with helpful tips on buying, driving and maintaining their vehicles to reduce fuel consumption and GHG emissions.
- ecoENERGY for Biofuels will invest up to $1.5 billion over 9 years to boost Canada's

[3] The latest year for which data is available.

production of renewable fuels – like ethanol and biodiesel – through incentives to encourage greater private sector investment in biofuel production.

- ecoENERGY for Equipment builds on existing initiatives by investing $32 million over 4 years to help Canadians make energy-efficient choices when buying, selling or manufacturing energy-using equipment. Existing regulations are being made more stringent, new regulations are being developed and compliance is enforced. The program also supports promotional labelling programs, such as ENERGY STAR®, to ensure that there are continuing efficiency improvements in energy-using products offered for sale in the Canadian market.

How will we measure performance?
Percentage improvements in energy efficiency and the resulting number of petajoules energy savings; renewable fuel production as a percentage of total on-road transportation fuel use; and alternative fuel use as a percentage of total on-road transportation fuel use.

Energy science and technology and materials for production and transportation of energy and energy-efficient vehicles: Canadians derive new economic, environmental and social benefits from energy and minerals and metals science and technology

The joint aim of the four-year $230 million ecoENERGY Technology Initiative and other ongoing $56 million Program of Energy Research and Development is to accelerate the development and market readiness of technology solutions in clean energy that will reduce emissions of particulates, gaseous pollutants, toxic substances and GHGs arising from the production and use of energy. Activities are being pursued by public-private partnerships within six portfolios: clean fossil fuels; sustainable bioenergy, clean power generation, low-emission industrial systems, clean transportation systems, and clean energy systems for buildings and communities.

Government partnerships with various levels of government, industry, universities or other stakeholders create synergies and bring a diverse and effective range of project partners together to successfully accelerate new technologies through the various stages of the innovation cycle and provide focus to our energy science and technology activities.

Development of new knowledge and technologies also encourage market awareness and acceptance which helps advance clean energy technologies towards commercial acceptability. Science and technology contribution to updating and adapting codes, standards and regulations is helping to advance market penetration of new technologies and leading to a competitive advantage for Canadian industry.

NRCan's efforts of developing and demonstrating new leading-edge technologies is helping mobilize the competitive nature and creativity of entrepreneurs and industry, while our strategic partnerships are increasing Canadians' scientific knowledge and strengthening our standing in the international community – all leading to an increase in the export of innovative energy technologies.

Moreover, NRCan works with the Canadian minerals and metals sectors to advance integrated and commercially viable solutions that minimize environmental impacts. For example, NRCan and private industry are conducting research and development on new

metals and environmentally responsible production processes for the next generation of automobiles. These lighter-weight, but ultra-high strength metals will not only increase the performance efficiency and safety of vehicles, but will also reduce automobile environmental impacts. In addition, NRCan laboratories are developing new materials to increase the durability and reliability of oil and gas pipelines and to improve materials for use in the design and development of future nuclear reactors.

How will we measure performance?
Ratio of total research, development and demonstration government investments in energy science and technology versus leveraging funding from partners; the number of codes and standards that are published and revised; and the number of organizations that contract for access to advanced materials and energy technologies research.

Renewable energy programs: Increasing Canada's renewable energy supplies and making clean, renewable electricity and heat more available and less expensive for Canadians

ecoENERGY for Renewable Power consists of an investment of $1.48 billion to boost Canada's supply of clean electricity from renewable sources like wind, biomass, small hydro and ocean energy. This program will pay an incentive of one cent for each kilowatt-hour of eligible low-impact renewable electricity production over ten years to eligible recipients. It is estimated that by 2011, this program will result in the production of 14.3 terawatt hours (or 51.5 petajoules) of electricity per year of new, low-impact renewable power along with reductions in GHG emissions and critical air contaminants. The department currently anticipates that the number of applications received and projects registered will be significantly higher than what was anticipated at the commencement of this program in April 2007[4].

ecoENERGY for Renewable Heat will provide more than $35 million in incentives and industry support to increase the adoption of clean renewable thermal technologies used for space heating and cooling, and water heating (i.e., solar air and hot water heating). It is estimated that by 2011, this initiative will result in the installation of 700 solar thermal units in the industrial/commercial/institutional sector and thousands of units in the residential sector which have the potential energy savings of 0.35 petajoules, along with reductions in GHG emissions and critical air contaminants.

How will we measure performance?
Level of uptake of program by eligible participants.

[4] Expectations for this program are being formally risk managed under an integrated risk management framework.

Program Activity 2.2 - Ecosystem Risk Management
Planned spending for 2008-09: $226.6M

The program activity includes programs that help to understand the risks to our environment and the protection of critical resources such as groundwater.

NRCan is home to a substantial, world-class community of ecosystem and geosystem scientific and technical expertise.

Strong environmental performance in minerals and metals: Ecosystems risks due to mining are minimized by effective and efficient environmental assessments and improved environmental technologies and practices

NRCan provides expertise to ensure that government environmental policies, decision making, regulations and other protection measures pertaining to the metals industry are based on sound scientific information (e.g., Environmental Effects Monitoring under the Metal Mining Effluent Regulations). In addition, NRCan continues to fulfil its statutory obligations with respect to providing sound science for environmental assessments and regulations and other protective measures for mining projects as required under the *Canadian Environmental Assessment Act*, the *Canadian Environmental Protection Act*, and other legislation.

Furthermore, NRCan conducts research on the environmental impact of minerals and metals and provides science and technology for ecological risk management of metals in the environment. The department also provides strategies and options to the private sector for mine site decommissioning and reclamation. For example, in the Green Mines/Green Energy initiative, NRCan and its private sector partners are conducting pilot projects to transform mine waste sites into productive land for growing energy crops (such as corn, canola or soy) that can be harvested to make biodiesel or ethanol. Currently, mining and forestry companies, municipalities and academia are cooperating with NRCan to test the technology using composted municipal and forest industry wastes at mine waste sites near Sudbury and Timmins. Based on the results of these pilot projects, the department will look for opportunities to share these mine reclamation projects with Canadian industries and communities. In addition, our scientists are studying how to use biotechnology to reduce the environmental impacts of mine wastes. This work includes the use of bacteria to remove nitrogen compounds such as cyanates and ammonia from mill effluents, and to treat sulphur salts in tailings ponds.

NRCan also provides ongoing secretariat support to the multi-stakeholder Mine Environment Neutral Drainage Program, and the National Orphaned and Abandoned Mines Initiative to help provide solutions for Canada's environmental challenges related to mining.

How will we measure performance?
Environmental mining regulations are informed by sound science; and recognition of the high standards of public participation, transparency and rigour of environmental assessment projects.

Canada's forest ecosystems: Knowledge of Canada's forest ecosystems informs and influences decision-making

Canada's forest ecosystems provide immense economic, environmental and social benefits to Canadians. NRCan develops science and technology to inform forest management policies and practices that promote the long-term sustainability of the forest sector. The department is working with the Canadian Council of Forest Minister's (CCFM) Sustainable Forest Management Working Group to deliver upon the Boreal Action Plan, a framework that integrates environmental, economic and social concerns surrounding this vast forest ecosystem. During the planning period, NRCan will collect, analyze and synthesize data to provide stakeholders with reliable and accurate science-based information on the state of the boreal forest.

Moreover, NRCan will continue to work closely with provincial and territorial governments on forest-related climate change policy analysis development to ensure Canada's circumstances and interests are represented in international climate change agreements. In addition, the department will continue to meet Canada's forest-related climate change reporting obligations.

NRCan will also develop and share tools and knowledge on forest resources, forest ecosystems, and forest health that are required to support decision-making that leads to the sustainable development of Canada's forests. Further development of national forest information and monitoring systems, including the National Forest Inventory and National Forest Information System will provide fundamental forest-based information for science/policy development. The department will continue to produce authoritative reporting for decision makers, including the State of Canada's Forest Report, which is tabled in Parliament each year.

How will we measure performance?
Continuous assessments of knowledge gaps, and increase in the level of our knowledge contribution in policy and decision-making by stakeholders.

Geosciences are used to understand environmental performance: Geoscience knowledge is developed and used in environmental assessments, and Canada's underground water aquifers are mapped and understood

The Minister of NRCan is responsible under legislation for fostering the sustainable development of Canada's natural resources. In support of this mandate, the department provides expert advice with respect to the implementation of legislation including the *Canadian Environmental Protection Act* and the *Canadian Environmental Assessment Act*. The department's Environment and Health program contributes geoscience knowledge to environmental managers and regulators to support environmental management, regulation and policy development.

NRCan's Groundwater Mapping Program is in response to increasing government needs for science advice in the management of Canada's water resources. The National Groundwater Inventory will be populated from mapping program geoscience information and knowledge and its use promoted for the management of Canada's significant aquifers and groundwater resources.

How will we measure performance?
The extent to which earth science information contributes to risk reduction in resource development and land-use decisions.

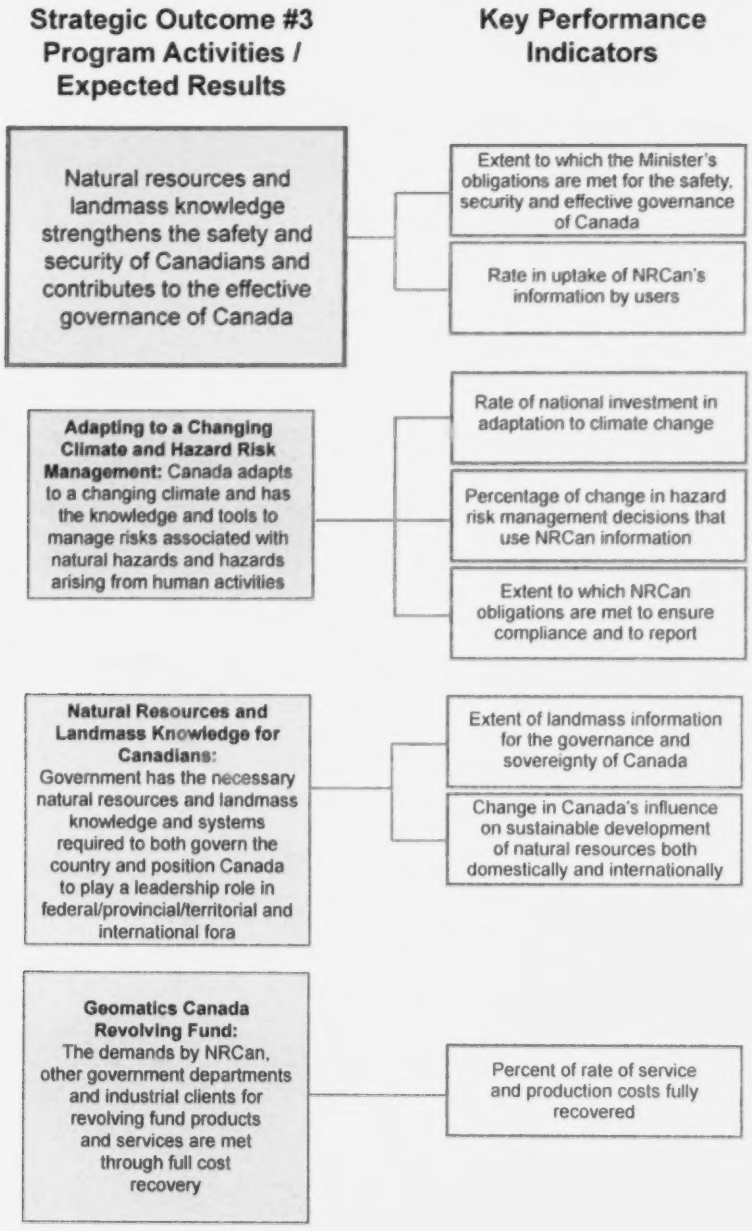
Radioactive waste management: Improved radioactive waste management practices meet modern day standards for safety and environmental protection

The Radioactive Waste Management programs are designed to mitigate risk to the environment and human health. These include the Nuclear Legacy Liabilities Program – a 70-year long-term strategy to deal with legacy commissioning and radioactive waste liabilities at Atomic Energy of Canada Limited sites, including the implementation of long-term solutions for the associated wastes – as well as ongoing efforts for the clean up of historic wastes of Ontario in the Port Hope area, and elsewhere in Canada.

The second year of the five-year start-up phase of the liabilities program is underway. Key goals of the five-year plan are to reduce risks and liabilities by addressing health, safety and environmental priorities; accelerating the decontamination and dismantling of shutdown buildings; and to provide the facilities, plans and studies required for the next phase of the program. Good progress is being made towards achieving the over 150 milestones that have been established to measure program success.

How will we measure performance?
Progress on clean-ups of contaminated sites and the development of long-term waste management approaches.

Strategic Outcome 3 -
Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada


Strategic Outcome #3 Program Activities / Expected Results
Key Performance Indicators
Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada
Extent to which the Minister's obligations are met for the safety, security and effective governance of Canada
Rate in uptake of NRCan's information by users
Adapting to a Changing Climate and Hazard Risk Management: Canada adapts to a changing climate and has the knowledge and tools to manage risks associated with natural hazards and hazards arising from human activities
Rate of national investment in adaptation to climate change
Percentage of change in hazard risk management decisions that use NRCan information
Extent to which NRCan obligations are met to ensure compliance and to report
Natural Resources and Landmass Knowledge for Canadians: Government has the necessary natural resources and landmass knowledge and systems required to both govern the country and position Canada to play a leadership role in federal/provincial/territorial and international fora
Extent of landmass information for the governance and sovereignty of Canada
Change in Canada's influence on sustainable development of natural resources both domestically and internationally
Geomatics Canada Revolving Fund: The demands by NRCan, other government departments and industrial clients for revolving fund products and services are met through full cost recovery
Percent of rate of service and production costs fully recovered

Operating Environment

The Government of Canada recognizes climate change as one of the most pressing environmental challenges facing the country. It is investing substantially across departments to address this issue. Efforts to date have focused primarily on mitigation. There is now a widespread recognition of the need for greater focus on impacts and adaptation. Estimates of the economic and non-economic costs of climate change to Canada are still in their infancy. These costs are generally considered to be substantive (NRCan, 2004, Climate Change Impacts and Adaptation: a Canadian Perspective). The return on investment is likely to be very high if we put resources now into research leading to proactive and precautionary adaptive measures, both to reduce losses associated with current climate variability, and to increase resiliency to future changes in climate.

The long-term competitiveness of Canada's forest sector is not only dependent on innovation, new technologies and expanded market opportunities, but it also depends heavily on the sustainability of forest resources. Natural disturbances such as pest infestations, wildland fire and climate change pose a significant threat to forest ecosystems, industry and communities. NRCan plays a pivotal role in developing science-based options for mitigating and adapting to these forest disturbances. Remaining competitive in global forest markets requires leadership both domestically and internationally. At home, Canada's forest sector must develop an innovation system to enable transformation. Abroad, Canada must use its leadership in sustainable forest management to ensure international competitors adhere to equally high standards of sustainable development. The department is well-positioned to work with governmental and non-government organizations to advance Canada's interests in these areas.

Supporting Canada's Arctic sovereignty is a priority for the department and for the Government of Canada. Opportunities for social and economic development are emerging across the Arctic due to increased access caused by melting sea ice. As international interest in the region grows, other circumpolar nations are exerting their claims to sovereign rights to the extended continental shelf in the Arctic. The opening of the Northwest Passage and other marine corridors means increased international traffic through Arctic waters. It is important to exercise Canada's sovereignty over its northern lands and waters to protect Canada's territory and develop a strong and sustainable North.

Planned Financial and Human Resources by Program Activity

Program Activity ($M)	2008-09		2009-10		2010-11	
	$M	FTEs	$M	FTEs	$M	FTEs
3.1 Adapting to a Changing Climate and Hazard Risk Management	111.9	705	66.7	689	64.2	679
3.2 Natural Resources and Landmass Knowledge for Canadians	139.1	780	120.4	778	104.1	771
3.3 Geomatics Canada Revolving Fund - Operational expenditures - Respendable revenue	 1.9 (1.9)	 16 (16)	 1.9 (1.9)	 16 (16)	 1.9 (1.9)	 16 (16)
Total	**251.0**	**1,485**	**187.1**	**1,466**	**168.3**	**1,449**

* FTE costs for the Geomatics Canada Revolving Fund are fully cost-recovered.

Program Activity 3.1 - Adapting to a Changing Climate and Hazard Risk Management
Planned spending for 2008-09: $111.9M

This program activity provides science-based information to reduce risks to Canadians and to support emergency response in the event of natural hazards, such as earthquakes and floods, as well as ensuring that regulations related to potential hazards arising from human activities, such as explosives and fireworks, are informed and enforced. In addition, the department provides science-based information to help Canadians mitigate and adapt to the potential effects of a changing climate.

Mining, infrastructure and explosives safety and security: Safety and security of Canadians are improved with respect to mining, pipeline infrastructure and explosives

NRCan is committed to modernizing its regulatory framework and to advancing standards and technologies to ensure the protection of the health, safety and security of Canadians. Under the *Explosives Act*, NRCan optimizes the safety and security of workers and the public through the effective regulation of the manufacture, storage, sale and possession of explosives and fireworks by means of a licensing and inspection program. Regulatory modernization will be undertaken in stages by moving forward completed components. During the reporting period, the department plans to enact new explosives precursor regulations on essential chemical components that can be used to make explosives. The user fees charged under the *Explosives Act* are also proposed to be revised to appropriately reflect the current costs of delivering the regulatory program and the split of public and private benefits of the program. Stakeholder consultations will begin early in 2008. Further work will include the modernization of the explosives safety regulatory framework with a view to streamlining the regulatory process and reducing the burden on businesses.

Working with the Canadian industry, the department will refocus its oil and gas pipeline infrastructure activities on improved technologies, strategies, tools, codes and standards to enhance the reliability of oil and gas pipelines, emphasizing issues related to conditions found in Canada's North. Moreover, NRCan scientists will work closely with industry to conduct research and development in support of regulations, standards and application of advanced mining technologies to ensure that Canadian mines operate with a high level of safety,

security and reliability. For example, NRCan is participating in a cooperative initiative between industry and government to develop a toolbox of explosives-free rock breaking technologies for underground mining to increase the safety and efficiency of accessing ore bodies.

How will we measure performance?
Number of organizations that contract access to advanced research to improve pipeline reliability and reduce associated environmental, health and safety risks; and low levels of explosives-related accidents and thefts.

Forest disturbances: Natural and human-caused forest disturbances are mitigated and options for adaptation are provided

Forest disturbances such as pest infestations and wildland fire continue to have broad reaching impacts on Canada's forest sector. NRCan works closely with its partners to develop the knowledge and strategies needed to help stakeholders mitigate and adapt to the impacts of these disturbances.

In collaboration with the Canadian Council of Forest Ministers, NRCan is working with provincial and territorial partners to develop national-level frameworks that will address forest disturbances. Under the Forestry Industry Long-Term Competitiveness Strategy, the department is investing in the development of the National Forest Pest Strategy (NFPS) and provide scientific information, tools and policy expertise on forest pests. The NFPS will provide mechanisms for national coordination and support of pest-related mitigation and adaptation activities. Current efforts to address the mountain pine beetle infestation in British Columbia (B.C.) will serve as a test case for the pest threat assessment model.

The scale of the current mountain pine beetle infestation in B.C. is vast, and the beetle's rapid eastward spread constitutes a major threat to Alberta's forests. The infestation has the potential to threaten the boreal forest, which constitutes the majority of Canada's forest, stretching from north eastern B.C. to Newfoundland. The department will continue to implement the federal response to the mountain pine beetle with the provinces of B.C. and Alberta and other areas requiring front line control efforts. The response has three key elements: controlling the spread into Alberta and the boreal forest; protecting forests and forest communities; and recovering economic value from beetle-killed wood.

Also under the auspices of the Council, NRCan will support the implementation of the Canadian Wildland Fire Strategy through the provision of science-based information and technology to inform decision-making and policy development concerning wildland fire. Moreover, NRCan is developing science-based knowledge, tools and options to help the forest sector mitigate and adapt to the effects of climate change. This includes forecasting of climate-related impacts to forest productivity and ecosystem processes, as well as changes to disturbance regimes such as wildland fire and pests.

How will we measure performance?
Response to forest disturbances of national significance are assessed via comprehensive science-based frameworks; enhanced science-based forecasts of forest disturbance patterns of national significance; and instances of NRCan-derived tools and techniques being used by forest managers.

Strategic Outcome 3

Science and knowledge are used to help Canadians adapt to climate change and the risks of natural and man-made hazards are reduced: The impact of climate change and the risks of natural and man-made hazards on Canada's landmass and coastal areas is assessed, and strategies are developed to adapt to these changes

NRCan assists Canadians in understanding, preparing for, and adapting to the effects of a changing climate on their communities, infrastructure, economy and way of life. This departmental priority will be achieved through conducting and publicizing research on and the assessments of the sensitivity of Canada's landmass, communities and infrastructure and their resilience to climate change. It will also be achieved through the development of decision-support tools that assist Canadians in using this knowledge in planning and resource management, and through the development of regional collaborative mechanisms that bring together stakeholders to address adaptation issues of common interest. Together these activities will assist Canadians in reducing risks and costs and improve their ability to take advantage of opportunities that may result from a changing climate.

Ensuring the safety and security of Canadians is a fundamental role of government. To address mandated responsibilities under the *Emergency Management Act*, the *Comprehensive Nuclear Test Ban Treaty Implementation Act*, and the Federal Nuclear Emergency Plan, NRCan provides information from its monitoring networks and survey equipment, from satellite systems and from its map and data repositories to provide round-the-clock real-time monitoring and alerting for natural hazards such as earthquakes, tsunamis, volcanoes and geomagnetic storms, to mapping and imagery support for rapid and informed decision-making for response to emergencies, and to specialist support for nuclear and counter-terrorist incident response. Additionally, long-term monitoring of, and research into, natural hazards provides assessments that are used to improve building codes and to inform development decisions, providing cost-effective improvements to protection from these hazards for Canadians and their infrastructure.

How will we measure performance?
Meeting the requirements of emergency response agencies and Comprehensive Test Ban Treaty obligations; and the extent to which hazard assessments and infrastructure information are used in mitigation and emergency planning.

Program Activity 3.2 - Natural Resources and Landmass Knowledge for Canadians
Planned spending for 2008-09: $139.1M

The program activity carries out the Government's obligation to provide a property rights infrastructure on all lands on which it holds responsibility for, along with the provision and access to accurate and precise geographic information on the Canadian landmass. This program also provides relevant accurate, timely and accessible statistics and knowledge with a view to increasing collaborative efforts with other jurisdictions in key areas (i.e., regulatory efficiency) to generate improved approaches to shared issues and lead to significant benefits. It is also about increasing Canada's ability to advance the interests of the natural resource sectors both domestically and at the international level.

Minerals and metals knowledge and information: Canada is recognized for the excellence of its comprehensive minerals and mining statistical and other information to improve decisions regarding natural resources

NRCan is the national authority for statistics on minerals and mining in Canada that are used to provide a solid foundation for informed decisions by government, industry, and non-governmental organizations, as well as individual Canadians. Information is provided to Statistics Canada under a special relationship and to all provinces and territories under the terms of various memoranda of understanding (MOU).

During the reporting period, NRCan will expand its current collaboration on statistics with industry associations in Canada, such as the Canadian Association of Mining Equipment and Services for Export and the Prospectors and Developers Association of Canada. The department will also seek to upgrade its MOUs with the provinces and territories in order to improve cooperation, information sharing and the quality of statistical information related to minerals and mining in Canada.

How will we measure performance?
Data meet rigorous quality control systems of national and international clients, at face value.

Forest sector innovation system: An integrated national forest innovation system that sets strategic priorities for the sector

The long-term competitiveness of the Canadian forest sector is dependent upon the ability of its stakeholders to develop the national innovation system that is required to enable forest sector transformation. NRCan is working with provincial/territorial partners, industry, academia and others from across the forest sector research and development community to develop a competitive and better integrated forest innovation system.

The department will continue to support the development of the recently-merged national forest research institute, FPInnovations, which is comprised of four divisions – Paprican, Forest Engineering Research Institute of Canada, Forintek and the NRCan-created Canadian Wood Fibre Centre (CWFC). During the planning period, NRCan will provide support for further development of the institute's governance and operational infrastructure, along with investments in key research initiatives.

The CWFC operates under the umbrella of FPInnovations, to create innovative knowledge that increases the value from Canadian wood fibre. Investments under the competitiveness strategy will support expanded development of the CWFC's programs to extract more value from Canada's forest fibre.

NRCan is taking an integrated approach to fostering and strengthening relationships among the forest sector's key research and development performers – including governments, universities, institutions, and service providers – to build an infrastructure that supports an integrated national innovation system through the following initiatives:

- implementation of the recently-developed Canadian Council of Forest Ministers' (CCFM) strategic plan to drive priority-based decision-making;
- under the CCFM, development of Canada's Forest Strategy – 2008 and Beyond, focusing on change and adaptability through innovation;
- benchmarking innovation by measuring areas such as technology adoption, science and technology investment and implementation of innovative management practices;
- strengthening relationships through active engagement with academia; and
- demonstrated NRCan leadership through the implementation of best-in-class innovation management principles and practices to set priorities and increase knowledge sharing.

How will we measure performance?
Mechanisms for strategic discussions and setting priorities are in place among the forest sector players; a national innovation system with diverse representation of key groups; work of the groups addresses the strategic priorities set for the sector.

International influence: Canada is a globally-recognized leader of forest sector sustainability

NRCan's objective is to increase Canada's ability to advance the interests of its domestic forest sector at an international level. In that context, NRCan will position Canada to achieve desired forest sector outcomes in international processes and to meet international commitments, and will encourage the emulation of our high standards of sustainable forest management by other forest countries.

During the 2008-09 planning period, NRCan will work to promote Canada's forest-related policy objectives through international frameworks for dialogue and cooperation at bilateral and multilateral levels. As the host and key sponsor for the International Model Forest Network Secretariat, NRCan will lead the advancement and sharing of sustainable forest management practices among member countries, including the creation of a circumboreal network of model forests to develop science/policy priorities of transnational importance. Renewed in October 2007, work under the Canada-Russia Technical Cooperation Program will lead to improved management practices in Russia.

NRCan is partnering with the Department of Foreign Affairs and International Trade (DFAIT) and the Canadian International Development Agency in leading an international dialogue for establishing a legally-binding instrument for sustainable forest management. Together with DFAIT, NRCan is pursuing preparations for Canada to ratify the International Tropical Timber Agreement (ITTA), which was finalized in January 2006. The ITTA aims to conserve tropical forests and assist tropical-forest nations to develop economically. NRCan will continue to work with other government departments to ensure a strong, coherent and persuasive voice for Canada's forest sector internationally.

How will we measure performance?
Number of countries participating in NRCan-led international forest policy initiatives; extent to which Canada is considered a global leader in science and technology relating to forests; and number of S&T projects initiated by the department where advice and assistance are sought.

Basic infrastructure is provided to support the governing of Canada

Canada ratified the United Nations Convention on the Law of the Sea in November 2003. Starting from that date, it has ten years to submit evidence to the United Nations Commission for the Limits of the Continental Shelf to support the establishment of the outer limits of its continental shelf in both the Atlantic and Arctic Oceans. Doing so will enable Canada to achieve greater certainty with regards to its sovereign rights over the Atlantic and Arctic extended continental shelves. This includes any mineral and hydrocarbon resources in those areas beyond the customary exclusive economic zone.

The Polar Continental Shelf Project will continue to coordinate support for, and offer expert advice to Canadian government and university scientists and independent, private

sector and non-Canadian researchers working in isolated areas throughout the Canadian Arctic. This year, the project celebrates it 50th anniversary.

The department is implementing a strategic plan with respect to managing key jurisdictional boundaries in Canada, surveying Aboriginal Land claims and ensuring that property rights systems support self-government initiatives. The strategy is to be supported through collaboration with key stakeholders including Indian and Northern Affairs Canada that will help ensure that appropriate long-term resources are in place.

The department's two satellite ground receiving stations at Prince Albert, Saskatchewan and Gatineau, Québec have been upgraded to support the reception of data and images from the recently-launched Radarsat-2 earth observation satellite. This new capacity will enable Canada to have access to high resolution, all weather, day and night, satellite imaging capability that will cover all of Canada's landmass and coastal regions, including the Arctic.

NRCan's surveying and mapping activities are basic functions required to govern a country the size of Canada. These activities are carried out in collaboration with provincial, territorial and municipal governments and are used by government departments and agencies for a broad range of applications, from managing emergency situations to protecting the rights of Canadians.

To meet demands for national topographic map information, the department will implement a targeted map revision program to update its topographic maps, and further expand no-fee access to its digital topographic map data. As well, NRCan will continue to play a leadership role in the federal and federal-provincial-territorial geomatics community. It will advance the federal coordination through the Inter-agency Committee on Geomatics, the implementation of the Treasury Board Secretariat federal geomatics strategy, and federal-provincial-territorial coordination through a renewal of the Ministerial Geomatics Accord.

The department will also continue to support the basic functions of governing Canada by: providing geographic information and place names for all of Canada in a consistent national system, in partnership with the provinces and territories; promoting the understanding of Canada, our landmass and our history through the maintenance of the Atlas of Canada; and making all of this land use information freely available to the public.

How will we measure performance?
Extent of landmass information for the governance and sovereignty of Canada.

Program Activity 3.3 - Geomatics Canada Revolving Fund[5]

The Geomatics Canada Revolving Fund (GCRF) was established under Appropriation Act No. 3 in 1993-94. The fund allows Geomatics Canada to shift the costs from taxpayers at large to specific users who benefit directly from the goods and services provided.

This revenue retention mechanism gives Geomatics Canada the ability to recover full costs from Canadian customers and the freedom to charge market prices for international clients. It presents the opportunity to provide an increasing volume of products and services in response to the needs of Canadian clients, as well as supporting the Canadian geomatics industry through the knowledge and expertise necessary to be competitive in the international market.

How will we measure performance?
Percent of rate of service and production costs fully recovered.

[5] GCRF operational expenditures in the amount of $1.9M are totally offset by revenues.

1. Departmental Link to Government of Canada Outcomes

The following table presents planned spending information by program activity over the planning period and the alignment of these program activities to the Whole of Government Framework used for government-wide reporting.

Strategic Outcome 1 – Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians				
Program Activities	Planned Spending			Alignment to Government of Canada Outcome Area
	2008-09	2009-10	2010-11	
1.1 Economic Opportunities for Natural Resources*	1,280.8	1,163.8	1,112.8	Strong Economic Growth
1.2 Natural Resource-based Communities	29.6	33.9	39.9	Strong Economic Growth

Strategic Outcome 2 – Canada is a world leader on environmental responsibility in the development and use of natural resources				
2.1 Clean Energy	562.0	646.7	753.8	A Clean and Healthy Environment
2.2 Ecosystem Risk Management	226.6	204.0	212.7	A Clean and Healthy Environment

Strategic Outcome 3 – Natural resources and landmass knowledge strengthens the safety and security of Canadians and contributes to the effective governance of Canada				
3.1 Adapting to a Changing Climate and Hazard Risk Management	111.9	66.7	64.2	An Innovative and Knowledge-based Economy
3.2 Natural Resources and Landmass Knowledge for Canadians	139.1	120.4	104.1	An Innovative and Knowledge-based Economy
3.3 Geomatics Canada Revolving Fund - Operational expenditures - Respendable revenue	 1.9 (1.9)	 1.9 (1.9)	 1.9 (1.9)	An Innovative and Knowledge-based Economy

* Planned spending includes statutory programs – Atlantic offshore: $1,087.4M in 2008-09; $1,026M in 2009-10; and $984.1M in 2010-11.

2. Sustainable Development Strategy

NRCan's fourth Sustainable Development Strategy (SDS), *Achieving Results,* was tabled in Parliament in December 2006. As a key tool for addressing the challenges and taking advantage of the opportunities related to sustainable development though the department's policies, programs and operations, the SDS challenges NRCan to further advance sustainability.

Achieving Results established three sustainable development goals that complement the department's Program Activity Architecture: enable Canada's natural resource sectors to contribute to a competitive economy and advance positive social and environmental outcomes; advance Canada's position as a world leader in sustainable resource development and use; and to integrate economic, environmental and social considerations into the department's decision-making and to continuously improve operations.

Through NRCan's Greening of Government Operations (GGO) initiative, the entire NRCan community is engaged in a renewed commitment to excellence in its environmental performance. Innovative approaches to accelerate the greening of the department's operations, such as the introduction of a commitment to further encourage green behaviours and the support for green efforts included in performance accords, are promoted.

More information on NRCan's SDS can be found at: <http://www.nrcan-rncan.gc.ca/sd-dd/pubs/strat2007/index.html>.

Goal 1: To enable Canada's natural resource sectors to contribute to a competitive economy and advance positive social and environmental outcomes		
Federal SD goal, including GGO goals	**Performance measurement from current SDS**	**Department's expected results for 2008-09**
Goal 5: Sustainable Development and Use of Natural Resources	Increase in preparedness and response capability through enhancements to the Canadian Interagency Forest Fire Centre. Expansion of the development and use of the Canadian Wildland Fire Information System as a publicly accessible fire warning and monitoring system. Development of a wildland fire plan in support of the Canadian Wildland Fire Strategy.	Develop and initiate implementation with the provincial and territorial governments, the Canadian Wildland Fire Strategy, a strategy to enhance the safety of Canadian communities from wildfire. (SDS Outcome 1.1.1)
Goal 4: Sustainable Communities Goal 5: Sustainable Development and Use of Natural Resources	Number of information sessions delivered. Number of information products distributed.	Increase Aboriginal understanding of and participation in mining. (SDS outcome 1.1.1)

Goal 5: Sustainable Development and Use of Natural Resources	Increase in capacity for monitoring and prediction. Improvement in response to forest pests based on integrated, risk-based approach. Identification of key S&T gaps and development of plan to address gaps.	With the provincial and territorial governments, develop a National Forest Pest Strategy that establishes a national decision-making framework based on a risk-based ecosystem approach, to ensure an integrated response to address the increasing threats posed by native and alien invasive pests to rural and urban forests. (SDS Outcome 1.2.1)
Goal 5: Sustainable Development and Use of Natural Resources	Completion of policy alternatives. Adoption of alternatives by mines ministers and other decision makers.	Develop policy alternatives to arrest the decline in Canada's base-metal reserves and promote adoption by mines ministers and other decision-makers. (SDS Outcome 1.2.1)
Goal 5: Sustainable Development and Use of Natural Resources	Development and implementation of information system.	Develop and implement an information system on mining research across Canada. (SDS Outcome 1.2.2)
Goal 5: Sustainable Development and Use of Natural Resources	Development and deployment of process.	Develop and deploy an innovative process to enhance the recovery of gold and silver. (SDS Outcome 1.2.2)
Goal 1: Water	Completion of synthesis document.	Analyze the current state of water use in natural resource sectors based on available data. (SDS Outcome 1.2.4)
Goal 3: Reduce Greenhouse Gas Emissions	Development of a new high-temperature aluminium-copper alloy and a metal-matrix composite for application in automobiles. Granting of the patent application and completion of foundry trials. Improvement in energy efficiency and reduction in manufacturing costs through the application of hydroforming using ultra high-strength steels.	Develop improved materials and processes to achieve more energy-efficient, lower-emission vehicles. (SDS Outcome 1.3.2)
Goal 5: Sustainable Development and Use of Natural Resources Goal 6: Strengthen Federal Governance and Decision-Making to Support Sustainable Development	Number of innovative approaches piloted. Number of pilot projects.	Work with the Canadian Environmental Assessment Agency and other government departments to pilot innovative approaches to improve regulatory efficiency in the natural resource sectors. (SDS Outcome 1.5.1)

Goal 2: To advance Canada's position as a world leader in sustainable resource development and use		
Federal SD goal, including GGO goals	**Performance measurement from current SDS**	**Department's expected results for 2008-09**
N/A	Number of new members. Adoption of priorities by the Forum.	A minimum of five new members join the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, and the Forum adopts a clear set of priorities. (SDS Outcome 2.1.1)
N/A	Strategic approach for development of joint knowledge and understanding of sustainable development of natural resources. Three new regional monographs developed to promote international cooperation and compliance with natural resources commitments.	Enhance leadership on international S&T related to natural resources, and joint knowledge development with partner countries. (SDS Outcome 2.1.2)
N/A	New partnerships to provide information and data on NRCan best practices and innovations. The posting of information on Foreign Affairs and International Trade Canada's Horizon Intranet website.	Establish a pilot quarterly information platform for Canadian Trade Commissioners on Canadian efforts to ensure sustainable natural resource development and use. (SDS Outcome 2.1.2)

N/A	Development of a vision and direction for energy and energy technology in the circumpolar north to be adopted by the Arctic Council. Participation in the Arctic Energy Summit Conference and Exposition to advance NRCan science, technology and policy expertise.	Contribute to the development of the Arctic Energy Summit, in partnership with the United States, as part of International Polar Year. (SDS Outcome 2.1.3)
N/A	Completion of a roadmap on the flow of metals through their life cycle, for the International Council on Mining and Metals. Completion of a report on metals' depletion related to life-cycle assessment, for the United Nations Environment Programme/Society for Environmental Toxicology and Chemistry.	Minimize or eliminate unnecessary restrictions on market access and investment in the area of metals. (SDS Outcome 2.1.4)
N/A	Completion of a series of short working papers/briefings on key techniques and issues, and lessons learned, linking economic performance, competitiveness and corporate social responsibility (CSR).	Build strategic analysis of linkages between trade and investment, competitiveness and CSR. (SDS Outcome 2.1.5)
Goal 3: To integrate economic, environmental and social considerations into departmental decision-making and to continuously improve operations		
Federal SD goal, including GGO goals	**Performance measurement from current SDS**	**Department's expected results for 2008-09**
N/A	Completion of training material and commencement of implementation of training.	Work with other government departments and the Canada School of Public Service to design and deliver new Government of Canada sustainable development training material. (SDS Outcome 3.1.1)

N/A	Development of departmental perspective of all information management (IM) and information technology (IT) activities and where IM and IT dollars are spent. Development of investment plans. Updating of governance structure with increased business input/representation and strategic focus.	Departmental vision and strategies for IM and IT approved. (SDS Outcome 3.1.2)

List of Tables Available Electronically

The tables below are available electronically at the following Treasury Board Secretariat web site: <http://www.tbs-sct.gc.ca/est-pre/20082009/p3a_esp>.

3. Details of Transfer Payment Programs Exceeding $5 Million/Year
4. Evaluations
5. Foundations (Conditional Grants)
6. Green Procurement
7. Internal Audits
8. Loans, Investments and Advances
9. Geomatics Canada Revolving Fund
10. Services Received Without Charge
11. Sources of Respendable and Non-Respendable Revenue
12. Summary of Capital Spending by Program Activity
13. User Fees